

SHORT ARTICLE

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Retrospective Analysis of Demographic and Clinical Profile of Dengue Infection in a Tertiary Care HospitalDenesh Narasimhan¹, Silpita Katragadda²

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Abstract

Background: Dengue infection is an exceedingly common cause of fever in the tropical countries. **Aim:** to study the demographic and clinical profile of Dengue patients. **Design:** Retrospective observational study of serologically proven dengue cases. **Methods and materials:** the study included Dengue patients admitted in PSG Hospital between January 2011 and December 2012. **Results :** Dengue infection was found to be more common in the younger age groups. It was more common in men. It was prevalent across all occupational profiles. The common clinical features included fever, myalgia, headache, abdominal pain, diarrhea and arthralgia. Bleeding manifestations included mucosal and skin bleeds and the commonest bleeding manifestation was melena. There was no major life threatening bleeds. Analysis of the hematological profile showed that nearly 91.5% of patients had thrombocytopenia with 48.9% having severe thrombocytopenia. **Conclusion :** Dengue infection is an important differential diagnosis for acute febrile illness in the tropics which can present with multiple non specific and systemic symptoms with a high incidence of thrombocytopenia.

Key-words: Dengue, Coimbatore, Demography, Tropical, Symptoms

Introduction

The word dengue is derived from Spanish in which it means “affectation”, “careful” or “fastidious” probably to describe the cautious stiff movements of patients suffering from it due to muscle, bone and joint pain. It was considered a sporadic disease in the 19th century. With the advent of globalization and increased travel, the incidence of dengue has increased 30-fold over the past century to become endemic in 112 countries in the world (1). About 50 million people develop dengue infection every year and 2.5 billion people live in endemic areas. (2). Dengue infection is a very important health problem affecting many tropical countries. Dengue is one of the important causes of undifferentiated fevers in India along with malaria, typhoid and other viral infections. Various endogenous studies are available in India, most of which have evaluated a few aspects of the disease spectrum. Some studies have documented the extent of epidemics with data collected during that period. There have been increasing reports of dengue infection with newer manifestations, mainly with hepatic and cerebral symptoms in the past (3,4). We designed a descriptive

study of adult dengue infection to describe the demographic and clinical profile. The aim of the study is to provide data on dengue infection in a tertiary care location in Tamil Nadu.

Materials and methods

This study was a retrospective analysis of patients who were admitted in the medical wards of PSGIMSAR with febrile illness and diagnosed to have dengue infection by serological analysis. These were mainly adult patients and were admitted between January 2011 and December 2012. All patients screened for this study had undergone dengue serology and only patients who were dengue IgM positive and greater than fifteen years of age were included in this study. Patients with other causes for fever and with coexisting infections were excluded from this study. Demographic data regarding age, gender, occupation and location were collected and tabulated. The spectrums of clinical features were noted. Complete blood count was assessed by coulter.

Results

Our present study was a retrospective analysis of patients presenting to our hospital in the years 2011-2012 who tested serologically positive for dengue infection. We performed a retrospective analysis of demographic and clinical profile of 235 patients with dengue infection who were admitted to our hospital. In our present study, the incidence of dengue infection had the highest incidence between 15-40 years. [FIG 1]. Of the 235 cases of dengue infection 60(25.5%) were primary dengue and 175(74.5%) cases were secondary dengue infection. Among 235 dengue patients, 144 were male and 91 were female. Occupational profile showed equal distribution of blue collar workers (unskilled workers) and students with lesser incidence in house wives and white collar (skilled) workers.[FIG 2]. In our study the commonest symptoms were fever [92%] followed by myalgia [40.4%], headache [42.4%], vomiting [40.4%].[FIG 3].Hepatomegaly seen in 6.80%, Splenomegaly1.30%, lymphadenopathy 0.40%,Pleural effusion 6.40% and abdominal findings 14.90% of individuals. Bleeding manifestations happened in 26.8 % of patients, the commonest of which was melena [7.20%], followed by gum bleeds, ecchymosis,, hematemesis, petechiae and purpura[FIG 4]. When the presence of thrombocytopenia was analyzed, it was found that 91.5% of the patients had low platelet counts [<150000 cells/mm³].

Fig.1. Prevalence of Dengue infection with age

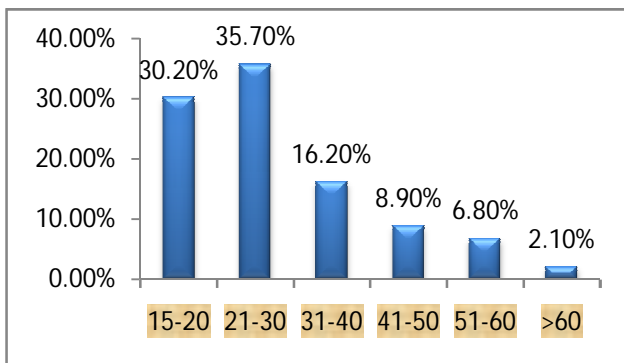


Fig 2.Occupation of Dengue infection

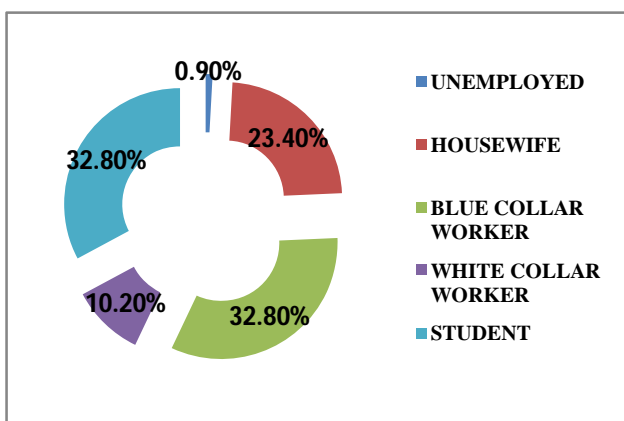


Fig 3.Symptoms of Dengue infection

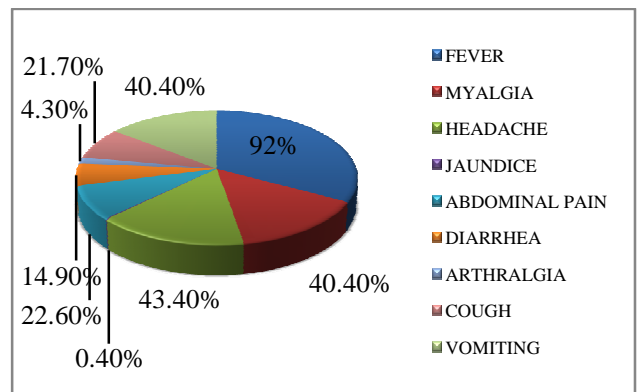
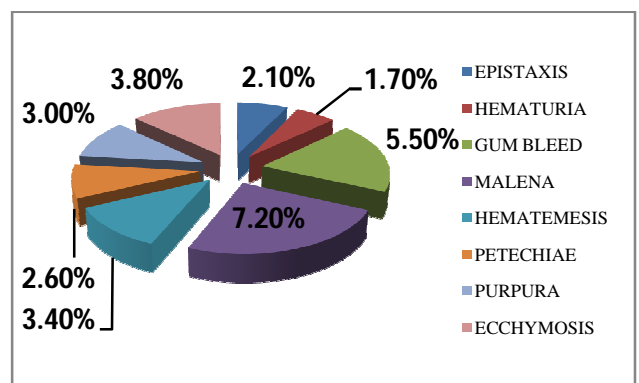


Fig 4.Bleeding Manifestation in Dengue infection



Discussion

There are 2.5 billion people living in the tropical & sub-tropical zones who are at risk of acquiring infection due to ideal environmental conditions for the transmission of dengue virus by Aedes mosquitoes. Outbreaks have occurred in five of six WHO regions over the past 50 years (1). Most of the cases of dengue infection are found in south east Asia and western pacific though it is prevalent in many countries.(2).

Our study included patients above 15 years. The incidence of dengue was least in the older age groups probably in our view because of lesser outdoor activity compared to younger people. This was similar to a study performed by Amir Khan et al (5).n a study by Khoa T.D.Thai et al (6) showed that increasing age lead to increasing risk of clinical attack in both primary and secondary dengue infection. This study was done by obtaining seroprevalence of dengue specific for age and frequency of clinical attack specific for age. This study included pediatric population and the average age of patients with primary and secondary dengue infection were 12 and 20 years respectively.

Our study showed a male preponderance in concordance with a study done by Prafulla Dutta et al (7)and Amir Khan et al(5). Another study from Prasith et al from Lao People’s Democratic Republic’s also showed a similar male preponderance of dengue infection (8). Majority of the patients were from Coimbatore and nearby districts.

In relation to occupational profile our study differs from the study by Prafulla Datta et al where majority of the patients were blue collar workers (7). This was because their study population was from a rural location and ours is from an urban location.

Secondary dengue infection was more common than primary dengue infection indicating that the majority of the patients had already had an attack of dengue infection.

In addition to the more common complaints such as fever, myalgia, headache, other symptoms included abdominal pain, diarrhea, arthralgia and cough. This was more or less similar to other studies from India done by Prafulla Dutta et al with slight differences (7). Their study showed a higher incidence of eye pain (68.5%) which was not present in our study. Our study showed that 20.4% of patients had cough and 40% of patients had vomiting which had not been reported in the 2003 dengue epidemic in the study by Rachel Daniel et al (10). Our study had lesser incidence of abdominal pain when compared to the study by Ritu Karoli et al (12). Abdominal pain may be related to inflammation of serosa. This finding was also similar to another study by Muhammad H et al. (11)

There was no major intracranial bleed on our study. In the study by Rachel Daniel et al showed a lower incidence [15.2%] of bleeding manifestations but with 2 major intracranial bleeds. Their commonest bleeding manifestation was melena which was similar to our study (10). In another study by Ritu Karoli et al, hemorrhagic manifestations were higher in 40% of patients with epistaxis being the commonest symptom (12).

The incidence of thrombocytopenia in our study was 91%, which was higher compared to the study by Prafulla Dutta et al (7) where the incidence of thrombocytopenia was 71.3% and similar to the study by Rachel Daniel et al (10) where it 90%. The majority had severe thrombocytopenia [<50000 cells/mm³] (48.9%), with the rest comprising of moderate [50000-100000 cells/mm³] (25.1%) and mild [100000 to 150000 cells/mm³] (17.4%) thrombocytopenia. The other 8.5% had normal platelet counts.

Conclusion: This study is a retrospective analysis capturing the demographic and clinical profile of dengue patients. Dengue infection forms an important differential diagnosis of acute febrile illness in the tropics. Since this was a retrospective analysis, not all aspects could be looked into. In future, there is a need for analysis of biochemical parameters of dengue patients.

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